Daily Diary Report by Bid Item

Contract No.: 04-0120F4
Diary #: 1314 **Const Calendar Day:** 887 **Date:** 08-Nov-2014 **Saturday**
Inspector Name: Brignano, Bob **Title:** Transportation Engineer
Inspection Type:
Shift Hours: **Break:** **Over Time:**
Federal ID:
Location:
Reviewer: Schmitt, Alex **Approved Date:** **Status:** Submit

04-0120F4
04-SF-80-13.2/13.9
Self-Anchored
Suspension Bridge

Weather

Temperature **7 AM** **12 PM** **4PM**
Precipitation **Condition** clear

Working Day ☑ If no, explain:

Diary: Dispute ☐

General Comments

CCO 314, SAMPLING AND TESTING A354 GRADE BD MATERIAL:

There is no work in the field on this operation today by ABF. The Townsend Test (Test IV) is complete and cleanup is in progress.

ITEM 53, TOWER FOUNDATION ANCHOR RODS GROUT MOCKUP:

There is work in the field on this operation today by ABF. ABF's crews at the Pier 7 warehouse are working an 8-hour shift 0700 through 1530. Since today is Saturday, the hourly labor earn 1.5x OT today. The tower foundation anchor rods grout mockup operation is inspected by Sami Daouk.

Today is the first water jetting test of the first mockup that ABF built. The mockup being water jetted today has 6 setups with an inner pipe to mimic the rod and an outer pipe for the pipe sleeve. Six (6) setups in this first mockup were built like this, and another 6 setups in a second mockup were built later with Denso wrapped galvanized rods but will be water jet tested later. The annulus between the 2 pipes for the setups in the first mockup was grouted a week ago on Saturday 11/1/2014. The grout has been cured for 7 days, but ABF did not take any cubes or cylinders so the actual grout strength is unknown. Today's mockup is a test by ABF and their subcontractors to find out how the water jetting system will work and test different equipment, with the later setups in the second mockup with Denso wrapped galvanized rods being more like the situation in the field and will be used to verify the system will not damage permanent materials.

Present for support of the water jetting operation from ABF is the full hourly crew – Ironworker General Foreman James (Fish) Sturgeon; Ironworker Journeyman Ricky Damboise; Operator Justin Garrett; Operator/Mechanic Joe Hernandez; Laborer Foremen Ignacio (Nacho) Garcia, Jose Avila, & Victor Hernandez; and Laborer Journeymen Carlos (Pedro) Garcia & Danny Schwartz. They are present for work on the mockup all day, but this is not continuous work for ABF's crew as the subcontractor works through its issues, so these people are idle for periods of time. Also present and assisting today is Ron Knarr from RK Electric. Present from ABF's engineering/office staff are Project Director Brian Petersen, Contracts Manager Brandon Yee, Field Engineer Bret Clark, and SWPPP Manager Bill O'Sullivan.

ABF's planned water jetting company is American Water Jetting from Richmond California. Because of the plan to water jet in the field with 2 shifts, a second water jetting company (RES Environmental Services from Pittsburg California, also known as Russo Environmental Services) will work with American Water Jetting – will provide people and equipment for the second shift in the field and additional crews working simultaneously in different areas of the tower base. Personnel from both American Water Jetting

and RES Environmental Services are present today for the mockup work.

After partially water jetting the first hole, American Water Jetting leaves the site at 1000 to go back to their yard in Richmond to get a different water jetting unit and different fittings. RES Environmental Services also goes back to their yard in Pittsburg to get different equipment. American Water Jetting had been water jetting with its 40,000 psi equipment and now wants to try using 20,000 psi equipment. The lower pressure system has more jets aimed upwards to pull out the grout debris and puts more water into the operation than the higher pressure system – a problem with the first test is that debris is staying at the bottom of the hole and then prevents the water jetting from cutting the intact grout under it. In order to clear out the debris, the water jetting operation needs to periodically stop and compressed air used to push up the debris – this interruption to the water jetting operation makes it take longer. Note that the grout has been coming out in large pieces, and instead of cutting the planned approximately 1" diameter pilot hole for boroscope inspection, all of the grout is being taken out over an area that is about half of the circumference of the filled annulus between the rod and pipe sleeve (mocked up with 2 pipes in this setup).

ABF and American Water Jetting also do a quick test to see how the water pressure affects the galvanizing on a hot dip galvanized piece of steel. Using an extra 2" diameter cable band bolt, the water jet is used at different pressures and at different angles. This is performed in the open and does not mockup how water will move inside of a grouted annulus between the rod and pipe sleeve. It is reported that water pressure over 30,000 psi appears to have an effect on the galvanizing on this 2" diameter cable band bolt. Hitting the galvanizing straight results in some loss of the galvanizing (in chips). Hitting the galvanizing at an approximately 30-degree angle polishes and shines the galvanizing but does not remove chips of galvanizing.

ABF uses a rented boroscope to inspect down the hole being water jetted – this is to see the sides and bottom of the hole as well as test the use of the equipment in a field situation. After water jetting about 6' deep on the first rod/sleeve, the water jetting moves to a second rod/sleeve.

American Water Jetting has been using a water jet gun with a shoulder stock or butt that bears against the operator's shoulder. This means the person needs to be above the grout being water jetted, which he is able to do in this mockup but he will not have as much access in the field with the rod extension up from the bottom of the tower and the stiffeners and bearing plate in the area. However, the water jet gun barrel is somewhat flexible which will allow him to stand back slightly from the rod. Also, the gun barrel needs to be extended (splice on additional pieces) as the water jetting goes deeper. In the afternoon, RES Environmental Services uses a lance system that does not have a fixed shoulder stock – it has a rigid pipe near the end with the nozzle, but then it is a flexible tube handled by gripping the tube and pushing the tube down without splicing on new pieces. By the end of the day, the second hole is water jetted about 7' deep. The lance system reportedly results in a smaller hole being water jetted out at the bottom – while blasting away about half of the grout at the top of the hole, less grout is removed near the bottom of the hole, with the planned smaller pilot hole apparently being achieved.

INSPECTOR OT REMARK:

Field and Office 6 hours: I am at work between 0800 and 1430. ABF is working in the field on the first tower foundation anchor rod mockup – first day of water jetting first mockup of 6 rods. I am in the field briefly, and I am in the office for various work related to A354 Grade BD bolts and rods.